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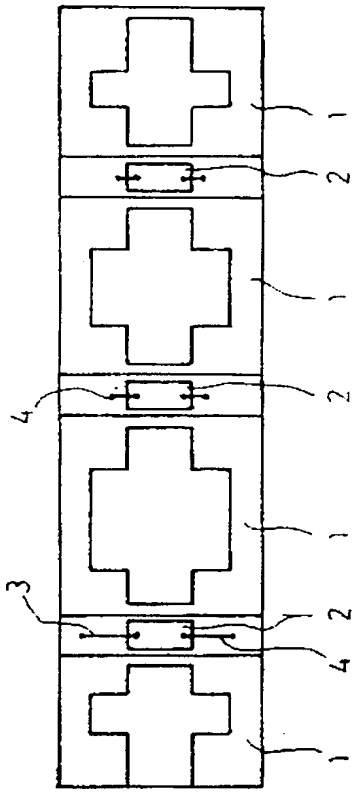
TITLE : MICROWAVE MULTI-STAGE AMPLIFIER



ABSTRACT : PURPOSE: To attain low noise/high gain for an integrated microwave multi-stage amplifier by increasing a grounding inductance of a transistor (TR) of the 1st stage more than the grounding inductance of a TR at the post-stage.

CONSTITUTION: The source inductance of a GaAsFET2 of the 1st stage is set to be larger than the source inductance of the post-stage by lengthening its grounding wire 3 far more than a grounding wire 4 of the post-stage. As a result, the input impedance of the GaAsFET of the 1st stage is increased by the feedback operation from the output side by increasing the source inductance and no thermal noise is generated because it is an inductance. On the other hand, since the source inductance is small, the GaAsFET of the post-stage has no feedback operation and a high gain is attained. Thus, the amplifier is matched to the impedance giving a minimum noise figure at the 1st stage and the high gain is attained at the post-stage.

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